CERTIFICATE OF TRANSMISSION

I hereby certify that this correspondence (along with any paper referred to as being attached or enclosed) is being submitted *via* the USPTO EFS Filing System on the date shown below to Mail Stop Appeal Brief-Patents, Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

Date: August 4, 2008 /Jessica Sexton/
Jessica Sexton

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re patent application of:

Applicant(s): Eric J. Horvitz

Serial No: 09/820,519

Filing Date: March 29, 2001

Examiner: William H. Wood

Art Unit: 2193

Title: METHODS AND APPARATUS FOR DOWNLOADING AND/OR DISTRIBUTING INFORMATION AND/OR SOFTWARE RESOURCES BASED ON EXPECTED UTILITY

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

REPLY TO NOTIFICATION OF NON-COMPLIANT APPEAL BRIEF

Dear Sir:

Appellant's representative submits this brief in connection with a notification of non-compliant appeal brief for the above-identified patent application. In the event any additional fees are due in connection with this submission, the Commissioner is authorized to charge such fees to Deposit Account No. 50-1063 [MSFTP291US].

I. Real Party in Interest (37 C.F.R. §41.37(c)(1)(i))

The real party in interest in the present appeal is Microsoft Corporation, the assignee of the present application.

II. Related Appeals and Interferences (37 C.F.R. §41.37(c)(1)(ii))

Appellant, appellant's legal representative, and/or the assignee of the present application are not aware of any appeals or interferences which may be related to, will directly affect, or be directly affected by or have a bearing on the Board's decision in the pending appeal.

III. Status of Claims (37 C.F.R. §41.37(c)(1)(iii))

Claims 1, 3-40 and 42-45 have been rejected by the Examiner. Claims 2 and 41 have been cancelled. The rejections of claims 1, 3-40 and 42-45 are being appealed.

IV. Status of Amendments (37 C.F.R. §41.37(c)(1)(iv))

No claim amendments have been entered after the Final Office Action.

V. Summary of Claimed Subject Matter (37 C.F.R. §41.37(c)(1)(v))

A. Independent Claim 1

The invention as recited in independent claim 1 relates to downloading resources (*e.g.*, software components), and a distribution thereof (*e.g., see* page 1 line 10, *see* page 11 lines 5-7, *see* Fig. 17, *see* Fig. 19, *see* page 16 lines 23-26, *see* page 70, *see* page 76) among intermediate storage facilities or receivers, while considering different latencies of such storage facilities (*e.g., see* page 16, lines 21-27); and/or optimizing such distribution (*e.g.*, *see* page 22, lines 9-15.) A probability of using a resource (*e.g.*, *see* page 20, lines 8-11; *see* page 20 lines 25 to page 21, line 5) is in part determined based on a user based factor (*e.g., see* page 10, lines 20-27; *see* page 20, lines 10-13; *see* page 23, lines 11-13; *see* page 30, lines 18-22; *see* page 31, lines 10-13) and resource-base factors (*e.g., see* page 11, lines 9-15; *see* page 20, lines 14-15; *see* page 23, lines 15-18; *see* page 31, lines 15-20.) For example, a ***cost of accessing*** the resources in an ***unloaded condition*** is

determined, (*e.g., see* page 39, lines 20-22, page 50 lines 15-20) - to facilitate an intelligent installment and/or distribution of resources that conserves resources (*e.g., see* page 105, lines 19-25). Hence, the probability of having to return to a CD-ROM resource during a life cycle of a product (*e.g., see* page 39, lines 20-22, page 50 lines 15-20) can be evaluated/determined, and an associated cost employed to make decisions regarding a download. (*See* page 39, lines 20-22). An expected value of downloading the resources can then be maximized (or minimizing the expected costs associated with going back to a resource source) (*See* page 11, lines 1-4).

As such, a usage of the resources to be downloaded can be probabilistically determined and ***request-to receive times*** that are associated with receipt of requested resource from the storage facilities are ***minimized***. (*See* page 22, lines 6-15). For example, in context of distributing software components across multiple storage facilities, the minimizing can be in form of moving resources in between slow and fast storage facilities, and can be inversely proportional to a size of the resource- (*e.g., see* page 22, lines 17-30.)

B. Independent Claim 15

Independent claim 15 recites means for storing (*e.g., see* page 32 -36 description of architecture, *see* Fig. 5 system memory 522) at least one user based factor (*e.g., see* page 10, lines 20-27; *see* page 20, lines 10-13; *see* page 23, lines 11-13; *see* page 30, lines 18-22; *see* page 31, lines 10-13) and at least one resource based factor factors (*e.g., see* page 11, lines 9-15; *see* page 20, lines 14-15; *see* page 23, lines 15-18; *see* page 31, lines 15-20), and means for maximizing an expected value and means for ***intelligently downloading*** (*e.g., see* page 32 -36 description of architecture, *see* page 86, lines 10-15, *see* Fig. 5 unit 521, computer 520, *see* Fig. 6 processor 602, *see* page 36, limes 9-16) resources to intermediate storage facilities based on a probability of use of such resources, wherein such downloaded resources are optimally distributed over the intermediate storage facilities, (*e.g., see* page 1, lines 5-15; *see* also page 22 lines 5-15.) Moreover, an expected "value" of downloaded resources can be maximized (*See* page 11, lines 1-4), by evaluating resources and users of such resources; (*e.g., see* page 18 lines 17-20; *see also* page 50 lines 15-20.) For example, in one aspect and regarding

distribution of software component across multiple storage facilities, the value can relate to minimizing expected costs over population of users; (*e.g., see* page 22, lines 18-30).

Moreover, distribution of the downloaded resources can be optimized over the intermediate storage facilities such that the total request to receive time is minimized; (*e.g., see* page 28, lines 20-24); and a ***cost of accessing*** the resources in a ***non-downloaded condition*** is determined, (*e.g., see* page 39, lines 20-22, page 50 lines 15-20) - to facilitate an intelligent installment and/or distribution of resources that conserves resources (*e.g., see* page 105, lines 19-25). The "means for" limitations described above are identified as limitations subject to the provisions of 35 U.S.C. §112 ¶6. Exemplary corresponding structures are identified with reference to the specification in the parentheticals above, which correspond to respective claim limitations.

C. Independent Claim 16

The subject invention as recited in independent claim 16 relates to a method of downloading resources, while maximizing an expected value of downloaded resources, (*e.g., see* page 18 lines 17-20; *see also* page 50 lines 15-20). User based factors (*e.g., see* page 10, lines 20-27; *see* page 20, lines 10-13; *see* page 23, lines 11-13; *see* page 30, lines 18-22; *see* page 31, lines 10-13) are accepted by the system, and storage capacity of the intermediate storage facility that the resources are downloaded therein are being changed based on a change of the expected value of the downloaded resources (*e.g., see* page 25 lines 15-21; *see also* page 50 lines 15-20).

D. Independent Claim 17

The invention as recited in independent claim 17 relates to a method of down loading resources, while changing a storage capacity of the intermediate storage facility based on a value and cost associated therewith; (*e.g., see* page 25 lines 15-21.) User based factors (*e.g., see* page 10, lines 20-27; *see* page 20, lines 10-13; *see* page 23, lines 11-13; *see* page 30, lines 18-22; *see* page 31, lines 10-13) are accepted by the system, and a ***cost of accessing*** the resources in an ***unloaded condition*** is determined, (*e.g., see* page 39, lines 20-22, page 50 lines 15-20) - to facilitate an intelligent installment and/or distribution of resources that conserves resources (*e.g., see* page 105, lines 19-25).

E. Independent Claim 22

Independent claim 22 recites a method of distributing (*e.g., see* page 1 line 10, *see* page 11 lines 5-7, *see* Fig. 17, *see* Fig. 19, *see* page 16 lines 23-26, *see* page 70, *see* page 76) resources among storage facilities by minimizing total expected request-to-receive times *via* utilization of the user-based factor (*e.g., see* page 10, lines 20-27; *see* page 20, lines 10-13; *see* page 23, lines 11-13; *see* page 30, lines 18-22; *see* page 31, lines 10-13), the resource-based factor (*e.g., see* page 11, lines 9-15; *see* page 20, lines 14-15; *see* page 23, lines 15-18; *see* page 31, lines 15-20), and the storage facility-based factors (*e.g.*, size and latencies for various storage facilities) (*e.g., see* page 11, lines 10-25, page 77, lines 24-26.) Moreover, a change of capacity (*e.g.,* increase or decrease) of the storage facilities can initiate based on the minimizing act, such as an associated change in value or cost; (*e.g., see* page 19, lines 1-5.)

F. Independent Claim 32

The invention as recited in independent claim 32 relates to initially determining probability of using a resource by a composite user (*see* page 86 lime 30, to page 87 line 13), and determining a change in value of storing resources at different locations (*see* page 13 lines 2-7, see page 18 lines 27 to page 19 line 5), and subsequently distributing resources among at least two storage facilities, by determining for each resource a value density (*see* page 51) in a knapsack approximation procedure (*see* page 69 line 5), which is based on a change in value of storing the resource on a first storage facility, as compared to storing such resource on the second storage facility (*e.g.*, *see* page 88 lines 24; *see also* page 67 line 20; *see* page 88 lines 24 to page 89 line 5, *see* also page 69 lines 4-6; and see also page 78 lines 15 to page 79 line 8.) Moreover, given a total size of resources being less than the finite available capacity of the first storage facility, the subject invention maximizes a total value density; (*e.g.*, *see* page 12 lines 3-6; *see also* page 13 lines 2-7, *see* page 25 lines 15-21; *see* page 27 lines 10-15.)

G. Independent Claim 39

Applicant's claimed invention as recited in independent claim 39 relates to means for ***intelligently downloading*** (*e.g., see* page 32 -36 description of architecture, *see* page

87, lines 10-15, *see* Fig. 5 unit 521 and computer 520, *see* Fig. 6 processor 602, *see* page 36, limes 9-16) resources to intermediate storage facilities (*e.g., see* page 1, lines 5-15; *see* also page 22 lines 5-15.) For example, distribution of the downloaded resources can be optimized over the intermediate storage facilities such that the total request to receive time is minimized; (*e.g., see* page 28, lines 20-24). In addition, distribution of the downloaded resources can be optimized over the intermediate storage facilities, such that the total request to receive time is minimized; (*e.g., see* page 28, lines 20-24). Moreover, a ***cost of accessing*** the resources in a ***non down-loaded condition*** is determined, (*e.g., see* page 39, lines 20-22, page 50 lines 15-20) - to facilitate such intelligent installment and/or distribution of resources that conserves resources (*e.g., see* page 105, lines 19-25). The "means for" limitations described above are identified as limitations subject to the provisions of 35 U.S.C. §112 ¶6. Exemplary corresponding structures are identified with reference to the specification in the parentheticals above, which correspond to respective claim limitations

H. Independent Claim 40

Applicant's claimed invention as recited in independent claim 40 relates to downloading resources to intermediate storage facilities, by accepting a user based factor (*e.g., see* page 10, lines 20-27; *see* page 20, lines 10-13; *see* page 23, lines 11-13; *see* page 30, lines 18-22; *see* page 31, lines 10-13) and a resource based factor factors (*e.g., see* page 11, lines 9-15; *see* page 20, lines 14-15; *see* page 23, lines 15-18; *see* page 31, lines 15-20), wherein such downloaded resources are optimally distributed over the intermediate storage facilities, (*e.g., see* page 1, lines 5-15; *see* also page 22 lines 5-15.) Such distribution of the downloaded resources can be optimized over the intermediate storage facilities, such that the total request to receive time is minimized; (*e.g., see* page 28, lines 20-24); and a ***cost of accessing*** the resources in a ***non-downloaded condition*** is determined, (*e.g., see* page 39, lines 20-22, page 50 lines 15-20) - to facilitate an intelligent installment and/or distribution of resources that conserves resources (*e.g., see* page 105, lines 19-25).

VI. Grounds of Rejection to be Reviewed (37 C.F.R. §41.37(c)(1)(vi))

A. Whether claims 15 and 39 are properly rejected under 35 U.S.C. §101 as being directed to non-statutory subject matter.

B. Whether claims 16, 17-38, 40, and 42-45 are properly rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter of the invention.

C. Whether claims 1, 3, 4-19 and 21 are properly rejected under 35 U.S.C. §103(a) as being obvious over Robinson (US Patent 5,918,014) in view of Drewry, *et al.* (US Patent 5,925,100) in further view of Cherkasova, *et al.* (US Patent 6,425,057).

D. Whether claims 22-31, 39-40 and 42-45 are properly rejected under 35 U.S.C. §103(a) as being obvious over Robinson in view of Drewry, *et al.* in view of Cherkasova, *et al.,* and in further view of Fischer, *et al.* (US Patent 6,438,672).

E. Whether claims 32-38 stand rejected under 35 U.S.C. §103(a) as being obvious over Robinson in view of Drewry, *et al.* , in view of Cherkasova, *et al.*, in further view of Fisher, *et al.* and in further view of Ganz, *et al.* (US Patent 6,049,549).

VII. Argument (37 C.F.R. §41.37(c)(1)(vii))

A. <u>Rejection of Claims 15 and 39 Under 35 U.S.C. §101</u>

Claims 15 and 39 stand rejected under 35 U.S.C. §101 as being directed to non-statutory subject matter. Reversal of this rejection is respectfully requested for at least the following reasons. The subject claims are directed to a computer implemented system for downloading/distributing resources, and produce useful, concrete and tangible results.

> Because the claimed process applies the Boolean principle [abstract idea] ***to produce a useful, concrete, tangible result*** … on its face the claimed process comfortably falls

> within the scope of §101. *AT&T Corp. v. Excel Communications, Inc*., 172 F.3d 1352, 1358. (Fed. Cir. 1999) (Emphasis added); *See State Street Bank & Trust Co. v. Signature Fin. Group, Inc*., 149 F.3d 1368, 1373, 47 USPQ2d 1596, 1601 (Fed.Cir.1998). The inquiry into patentability requires an examination of the contested claims to see if the claimed subject matter, as a whole, is a disembodied mathematical concept representing nothing more than a "law of nature" or an "abstract idea," or if the mathematical concept has been ***reduced to some practical application rendering it "useful***." *AT&T* at 1357 *citing In re Alappat*, 33 F.3d 1526, 31 1544, 31 U.S.P.Q.2D (BNA) 1545, 1557 (Fed. Cir. 1994) (Emphasis added) (holding that more than an abstract idea was claimed because the claimed invention as a whole was directed toward forming a specific machine that produced the useful, concrete, and tangible result of a smooth waveform display).

Contrary to the assertions made in the Final Office Action, the subject claims provide for a useful invention as disclosed in applicant's specification. Independent claims 15, 39 recite means for distributing/downloading resources in an intelligent manner (*e.g.*, to efficiently manage resources). The subject Specification provides ample examples of practical applications along with satisfactory explanations illustrating the usefulness of such efficient distribution/download methodology. The Specification discloses various optimizations and cost benefits, wherein distribution of the downloaded resources can be optimized over the intermediate storage facilities, such that the total request to receive time is minimized; (*see* the subject Specification at page 28, lines 20-24; page 22, lines 9-15; *see also* page 28, lines 20-24; *see also* page 39, lines 20-22, page 50 lines 15-20; *see also* page 105, lines 19-25.) The "means for" limitations described above are identified as limitations subject to the provisions of 35 U.S.C. §112 ¶6. Exemplary corresponding structures are identified with reference to the specification in the parenthetical above, which correspond to respective claim limitations.

In view of at least the above, it is readily apparent that the claimed invention reduces to a practical application that produces a useful, concrete, tangible result. Thus, the subject claims satisfy the utility requirement of 35 U.S.C. §101 and this rejection should be reversed.

B. Rejection of Claims 16, 17-38, 40 and 42-45 Under 35 U.S.C. §112

Claims 16, 17-38, 40 and 42-45 stand rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention, and for omitting essential steps under MPEP §2172.01. Applicant's representative respectfully submits that such section of the MPEP does not impose a requirement for recitation of the preamble within the body of the claim, and that no essential act has been omitted from the subject claims. The subject Specification discloses more than one embodiment, and a plurality of aspects related to downloading/distributing resources have been described therein (*e.g.*, *see* page 18 lines 17-20; *see* page 50 lines 15-20; *see* page 25 lines 15-21; *see* also page 50 lines 15-20). Reversal of this rejection is respectfully requested.

Independent claim 16 recites a method of downloading resources, while maximizing an expected value of downloaded resources, and changing a storage capacity of the intermediate storage facility (which the resources are downloaded therein) based on a change of the expected value of the downloaded resources. Accordingly, distribution of resources can be optimized among the storage facilities. Likewise, independent claim 17 recites a method of down loading resources, while changing a storage capacity of the intermediate storage facility based on a value and cost associated therewith. Moreover, a cost of accessing the resources in an unloaded condition is determined, to facilitate an intelligent installment and/or distribution of resources that conserves resources.

In addition, independent claim 32 recites a method of distributing resources among at least two storage facilities, by determining for each resource a value density in a knapsack approximation procedure, which is based on a change in value of storing the resource on a first storage facility, as compared to storing such resource on the second storage facility. Moreover, given a total size of resources being less than the finite available capacity of the first storage facility, the subject invention maximizes a total value density.

Likewise, independent claim 39 recites intelligently downloading resources to intermediate storage facilities. For example, distribution of the downloaded resources can be optimized over the intermediate storage facilities such that the total request to

receive time is minimized. In addition, distribution of the downloaded resources can be optimized over the intermediate storage facilities, such that the total request to receive time is minimized. Moreover, a cost of accessing the resources in a non down-loaded condition is determined, to facilitate such intelligent installment and/or distribution of resources that conserves resources.

Similarly, independent claim 40 recites downloading resources to intermediate storage facilities, wherein such downloaded resources are optimally distributed over the intermediate storage facilities. Such distribution of the downloaded resources can be optimized over the intermediate storage facilities, wherein the total request to receive time is minimized; and a cost of accessing the resources in a non-downloaded condition is determined, to facilitate an intelligent installment and/or distribution of resources that conserves resources.

Accordingly, the subject independent claims positively recite limitations/elements, and clearly define the metes/bounds of applicant's invention, to enable one skilled in the art to readily determine whether or not a particular collection of components infringe the collection of the interrelated components as defined by such independent claims. (*See Metabolite Labs., Inc. v. Lab. Corp. of Am. Holdings,* 370 F.3d 1354, 1366, 71 USPQ2d 1081, 1089 - Fed. Cir. 2004). Accordingly, it is respectfully submitted that the subject claims satisfy the requirements of 35 U.S.C §112. If the Examiner believes otherwise, the burden remains on the Examiner to specifically point out the language of the subject claims that are deemed indefinite - which has not been done for the subject case.

C. Rejection of Claims 1, 3, 4-19 and 21 Under 35 U.S.C. §103(a)

Claims 1, 3, 4-19 and 21 stand rejected under 35 U.S.C. §103(a) as being obvious over Robinson (US Patent 5,918,014) in view of Drewry, *et al.* (US Patent 5,925,100) in further view of Cherkasova, *et al.* (US Patent 6,425,057). Reversal of this rejection is respectfully requested for at least the following reasons. The combination of references as suggested in the Office Action does not teach or suggest applicant's invention as recited in the subject claims.

> [T]he prior art reference (or references when combined) must teach or suggest ***all claim limitations***. *See* MPEP

> §706.02(j). The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on applicant's disclosure. *See In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

Applicant's claimed invention in part is directed to methods and systems of downloading /distributing resources (*e.g.*, software components) among intermediate storage facilities and/or receivers, wherein a ***cost of accessing/returning*** to the resources in an ***unloaded condition*** is determined (*e.g., see* page 39, lines 20-22, page 50 lines 15-20). For example, the probability of having to return to a CD-ROM resource during a life cycle of a product can be evaluated/determined, and an associated cost employed to make decisions regarding a download. (*See* page 39, lines 20-22). Also, the claimed invention further enables changing a ***constraint associated with the intermediate storage*** facility, based on an associated change in value and cost. For example, a read access time or capacity of such intermediate storage facility can be changed, based on an associated variance in value and cost (*e.g., see* page 28, lines 20-24). As such, an intelligent installment/distribution of resources can be provided, which conserves storage resources (*e.g., see* page 1, lines 5-15; *see* also page 22 lines 5-15.) Such aspects of applicant's claimed invention are not taught or suggested by Robinson.

Rather, Robinson is directed to showing new ads to different people (typically without a request being made for such new ads), based on their past activities. Robinson tracks activities of a subject in an interactive medium to determine which advertisement to present to the user. Robinson does not teach or suggest: "minimizing ***request-to receive time";*** or "evaluating a cost of ***changing a constraint*** associated with the intermediate storage facility," and "***returning to resources in unloaded condition***"; as in applicant's claimed invention. In particular, there logically exists a distinction between "cost of ***not accessing*** a resource" as purportedly disclosed in Robinson – versus – "cost of ***accessing*** a resource in an ***unloaded condition"***, as in the claimed invention.

Independent claim 1 recites "distributing ***[…] to minimize total request-to-receive time***", and "evaluating a ***cost of accessing resources in unloaded condition***". Likewise, independent claim 15 recites "means for optimizing distribution over intermediate storage facilities ***to minimize total request-to-receive times"***, and "means for evaluating a cost to

retrieve resources in ***a non-downloaded condition***." Also, the limitations of "***changing a storage capacity of the intermediate storage***", and "***determining a cost of accessing*** a resource in an ***unloaded condition***" are respectively recited in independent claims 16 and 17.

In view of the at least above comments it is readily apparent that Robinson does not teach or suggest the subject invention as recited in independent claim 1 (and claims 3, 5-8, 11, 13, 14 dependent therefrom), independent claim 15, independent claim 16, independent claim 17 (and claims 18-20 dependent therefrom). Moreover, Drewry *et al.* in further view of Cherkasova, fails up to make for the aforementioned deficiencies of Robinson with respect to such independent claims. Reversal of this rejection is respectfully requested.

D. Rejection of Claims 22-31, 39-40 and 42-45 Under 35 U.S.C. §103(a)

Claims 22-31, 39-40 and 42-45 stand rejected under 35 U.S.C. §103(a) as being obvious over Robinson in view of Drewry, *et al.* in view of Cherkasova, *et al.,* and in further view of Fischer, *et al.* (US Patent 6,438,672). Reversal of this rejection is respectfully requested for at least the following reasons.

Independent claim 22 recites "***minimizing*** total expected request to receive time […] and ***changing a storage*** space associated with the intermediate storage facility, based on the ***minimizing act.***" As explained earlier, such aspects of the claimed invention are not taught or suggested by Robinson. Moreover, Drewry *et al.* and Cherkasova *et al.* in view of Fischer *et al.* fail to make up for the aforementioned deficiencies of Robinson with respect to independent claim 22.

Likewise, independent claim 39 recites "means for evaluating a cost to return to resources in non-downloaded condition", and independent claim 40 recites "determining a cost of ***returning to resources in an unloaded condition***"; as explained earlier Robinson fails to teach or disclose such aspects of the claimed invention. Furthermore, Drewry *et al.* and Cherkasova *et al.* in view of Fischer *et al.* fail to make up for the aforementioned deficiencies of Robinson with respect to independent claims 39 and 40.

In view of the at least above comments it is readily apparent that the cited references do not teach or suggest the subject invention as recited in independent claim

22 (and claim 23-31 dependent therefrom), independent claim 39, and independent claim 40 (and claims 42-45 dependent therefrom). Reversal of this rejection is respectfully requested.

E. Rejection of Claims 32-38 Under 35 U.S.C. §103(a)

Claims 32-38 stand rejected under 35 U.S.C. §103(a) as being obvious over Robinson in view of Drewry, *et al.* , in view of Cherkasova, *et al.*, in further view of Fisher, *et al.* and in further view of Ganz, *et al.* (US Patent 6,049,549). Reversal of this rejection is respectfully requested for at least the following reasons.

Independent claim 32 recites "***a first determining*** a probability […] ***a second determining*** […] ***a change in value of*** storing the resource on a first storage facility versus […] a second storage facility; determining, a ***change in cost of*** storing the resource on the first storage facility versus storing the resource on the second storage facility; determining, for each resource, a value density in a knapsack approximation procedure based on the change in value *via* ***the first determining act and the second determining act***[…]". Accordingly, the knapsack approximation procedure of the subject innovation is based on the first and second determining act.

Such aspects of the claimed invention are not taught or suggested by the knapsack procedure of Ganz *et al.*, which merely discloses existence of such procedure, and applies it to a capacity distribution of a communication system. Moreover, Robinson in view of Drewry *et al.*, and in view of Cherkasova *et al.* and further in view of Fischer *et al.* fail to make up for the aforementioned deficiencies of Ganz *et al* with respect to independent claim 32.

Furthermore, the Office Action relies on improper motivation to combine and/or modify the references. In general, the rationale proffered is to achieve benefits identified in applicant's specification, which overcome problems associated with conventional systems/methods. Applicant's representative respectfully submits that such rationale is an unacceptable and improper basis for a rejection under 35 U.S.C. §103. In essence, the Examiner is basing the rejection on the assertion that it would have been obvious to do something not suggested in the art because so doing would provide advantages stated in applicant's specification. This has been condemned by the CAFC. *See, for example*,

Panduit Corp. v. Dennison Manufacturing Co., 1 USPQ2d 1593 (Fed. Cir. 1987). It is noted that even if the references are combined, applicant's claimed invention does not result. Reversal of this rejection is respectfully requested.

F. Conclusion

For at least the above reasons, the claims currently under consideration are believed to be patentable over the cited references. Accordingly, it is respectfully requested that the rejections of claims 1, 3-40 and 42-45 be reversed.

If any additional fees are due in connection with this document, the Commissioner is authorized to charge those fees to Deposit Account No. 50-1063.

Respectfully submitted,

AMIN, TUROCY & CALVIN, LLP

/Himanshu S. Amin/
Himanshu S. Amin
Reg. No. 40,894

AMIN, TUROCY & CALVIN, LLP
24TH Floor, National City Center
1900 E. 9TH Street
Cleveland, Ohio 44114
Telephone (216) 696-8730
Facsimile (216) 696-8731

VIII. Claims Appendix (37 C.F.R. §41.37(c)(1)(viii))

1. A computer implemented method for downloading resources, from a source to an intermediate storage facility(ies), having a finite storage capacity, the computer implemented method comprising the following computer executable acts:

determining a probability of using a resource, the probability in part determined *via*;

accepting at least one user-based factor;

accepting at least one resource-based factor;

maximizing an expected value of downloaded resources *via* utilization of the at least one user-based factor and the at least one resource-based factor;

distributing downloaded resources among a plurality of storage facilities to minimize total request-to-receive time, and

evaluating a cost of accessing resources in an unloaded condition.

2. (Cancelled.)

3. The computer implemented method of claim 1 further comprising determining probabilities that a user belongs to various user type classes.

4. The computer implemented method of claim 3 wherein the probabilities that a user belongs to various user type classes are determined based on evidence using a Bayesian network.

5. The computer implemented method of claim 3 wherein the at least one resource-based factor includes probabilities that users of the various user type classes will use the resource at least once.

6. The computer implemented method of claim 1 wherein the at least one resource-based factor includes probabilities that users of various user type classes will use the resource at least once.

7. The computer implemented method of claim 3, wherein the at least one resource-based factor is a probability that the resource will be used at least once and is based on a sum, over all user type classes, of a product of :

a probability that the resource is used at least once, given that an application to which the resource belongs is used at least once, by a user of the user type class;

a probability that the application to which the resource belongs is used at least once by a user of the user type class; and

a probability that the user belongs to the user type class.

8. The computer implemented method of claim 1 wherein the at least one resource-based factor includes an association of each of the resources to at least one application class.

9. The computer implemented method of claim 8 wherein the at least one resource-based factor includes an indication, for each of the resources, of whether the resource is a core component or an optional component of the application class with which it is associated.

10. The computer implemented method of claim 1 wherein the act of maximizing an expected value of downloaded resources includes maximizing an expected value density of downloaded resources.

11. The computer implemented method of claim 1 wherein the act of maximizing an expected value of downloaded resources includes minimizing an expected cost of not having a needed resource.

12. The computer implemented method of claim 11 wherein the expected cost of not having a needed resource is based on one of enhancement rates of the resources and value densities of the resources.

13. The computer implemented method of claim 12 wherein the enhancement rate of a resource is based on the size of the resource, a probability of that resource being used at least once, and a cost of later downloading the resource.

14. The computer implemented method of claim 12 wherein the value density of a resource is based on the size of the resource and the probability that the resource will be used at least once.

15. A computer implemented system for downloading resources, comprising the following computer executable components:

means for storing at least one user-based factor and at least one resource-based factor;

means for maximizing an expected value of downloaded resources *via* utilization of the user-based factor and the resource-based factor;

means for intelligently downloading a resource based on a probability of use to intermediate storage facilities,

means for optimizing distribution over intermediate storage facilities to minimize total request-to-receive times, and

means for evaluating a cost to retrieve resources in a non-downloaded condition.

16. A computer implemented method of downloading a resource to an intermediate storage facility comprising the following computer executable acts:

accepting at least one user-based factor;

determining a probability of use for a resource by a user in a user type class;

accepting at least one resource-based factor;

maximizing an expected value of downloaded resources *via* utilization of the at least one user-based factor and the at least one resource-based factor, and

changing a storage capacity of the intermediate storage facility based on a change of the expected value.

17. A computer implemented method for installing software components, each having a size, from a source to an intermediate storage facility, the method comprising, the following computer executable acts:

predicting an expected frequency of use for a software component, in part *via:*

accepting at least one user-based factor;

accepting at least one component-based factor; and

changing a storage capacity of the intermediate storage facility based on a value and cost associated therewith, and

determining a cost of accessing a resource in an unloaded condition.

18. The computer implemented method of claim 17 wherein the at least one user-based factor includes probabilities that a user is member of various user type classes.

19. The computer implemented method of claim 17 wherein the at least one component-based factor includes an association of each of the software components to one of a plurality of application classes.

20. The computer implemented method of claim 19 wherein the at least one component-based factor further includes an indication, for each of the software components, of whether the software component is a core component or an optional component of the application class with which it is associated.

21. The computer implemented method of claim 20 wherein the at least one component-based factor further includes probabilities that each of the software components will be used at least once by users of various user type classes.

22. A computer implemented method for distributing resources, each having a size, among at least two storage facilities, the method comprising the following computer executable acts:

accepting at least one user-based factor;

accepting at least one resource-based factor;

accepting at least one storage facility-based factor;

accepting probabilistic relationships between user based factors and resource based factors;

minimizing total expected request to receive time *via* utilization of the user-based factor, the resource-based factor, and the storage facility-based factor; and

changing a storage space associated with the intermediate storage facility, based on the minimizing act.

23. The computer implemented method of claim 22 wherein the at least one user-based factor includes probabilities that a user belongs to various user type classes.

24. The computer implemented method of claim 23 further comprising determining the probabilities that a user belongs to various user type classes.

25. The computer implemented method of claim 24 wherein the probabilities that a user belongs to various user type classes are determined based on evidence using a Bayesian network.

26. The computer implemented method of claim 23 wherein the at least one resource-based factor includes frequencies at which users of the various user type classes will use each of the resources.

27. The computer implemented method of claim 26 wherein the at least one storage facility-based factor includes an available capacity of each of the two storage facilities and a relative request-to-receive latency of each of the two storage facilities.

28. The computer implemented method of claim 27 wherein the total expected latencies is a function of the frequencies at which users of the various user type classes will use each of the resources, and a difference between the relative request-to-receive latencies of the two storage facilities.

29. The computer implemented method of claim 22 wherein the at least one storage facility-based factor includes an available capacity of each of the two storage facilities and a relative request-to-receive latency of each of the two storage facilities.

30. The computer implemented method of claim 22 wherein the total expected latencies to request and receive resources is minimized based on value densities of the resources.

31. The computer implemented method of claim 30 wherein the value densities of the resources are based on the frequency of use of the resources and a difference in request to receive latencies between the at least two storage facilities.

32. A computer implemented method of distributing resources, each having a size, among at least two storage facilities, each of the storage facilities having a finite available capacity, the computer implemented method comprising the following computer executable acts:

a first determining a probability of using a resource by a composite user;

a second determining, for each resource, a change in value of storing the resource on a first storage facility versus storing the resource on a second storage facility;

determining, for each resource, a change in cost of storing the resource on the first storage facility versus storing the resource on the second storage facility;

determining, for each resource, a value density in a knapsack approximation procedure based on the change in value *via* the first determining act and the second determining act; and

maximizing a total value density given a total size of resources being less than the finite available capacity of the first storage facility.

33. The computer implemented method of claim 32 wherein the value of storing a resource on the first storage facility is a function of a perceived utility of such storage, per request for the resource, and a frequency of requests for the resource.

34. The computer implemented method of claim 33 wherein the perceived utility of such storage, per request for the resource, is a function of a request-to-receive time delay.

35. The computer implemented method of claim 34 wherein the request-to-receive time delay is a function of at least one of:

a storage device read access time,

a network speed,

a network latency, and

the size of the resource.

36. The computer implemented method of claim 35 wherein the network speed is a function of a user configuration.

37. The computer implemented method of claim 33 wherein the frequency of requests for the resource is a function of a user type class and a number of users belonging to the user type class.

38. The computer implemented method of claim 32 wherein the cost of storing a resource on the first storage facility is a function of the resource size.

39. A computer implemented system for distributing resources, each having a size, among at least two storage facilities, each of the storage facilities having a finite capacity and a request-to-receive latency, the computer implemented system comprising the following computer implemented components:

storage means for storing at least one user-based factor, at least one resource-based factor, and at least one storage facility-based factor;

means for minimizing total expected latencies to request and receive resources,

means for intelligently downloading resources; and

means for evaluating a cost to return to resources in non-downloaded condition.

40. A computer implemented method of downloading a resource(s) to an intermediate storage facility comprising the following computer executable acts:

accepting at least one user-based factor;

accepting at least one resource-based factor;

accepting at least one storage facility-based factor;

accepting probabilistic relationships between the at least one-user based factor and the at least one resource based factor;

minimizing total expected latencies to request and receive resources, and

determining a cost of retuning to resources in an unloaded condition.

41. (Cancelled.)

42. The computer implemented method of claim 40 further comprising changing a storage capacity of the storage medium based on at least one of a change in value and cost.

43. The computer implemented method of claim 42 further comprising changing the storage capacity when a ratio of value to cost is greater than one.

44. The computer implemented method of claim 43 wherein the at least one user-based factor is a function of a time offline until the intermediate storage facility is reconnected with a source.

45. The computer implemented method of claim 44 wherein the time offline is a probability distribution considering at least one of:

a resource context,

a user type class, and

a recent usage pattern.

IX. Evidence Appendix (37 C.F.R. §41.37(c)(1)(ix))

None.

X. Related Proceedings Appendix (37 C.F.R. §41.37(c)(1)(x))

None.